

Winter Raises Cold Stress Risk

Despite cold temperatures, the activity of winter work may fuel a false sense of protection against cold weather hazards. If unprepared, Laborers can be numbed into serious cold stress injuries, including hypothermia, frostbite and trench foot.

Hypothermia

Hypothermia literally means “low heat” and develops when body heat is lost faster than it is replaced. Symptoms range from shivering, slurred speech, memory loss and pale, cold skin to confusion, severe muscle stiffness, loss of consciousness and death.

Temperatures do not have to be below freezing for hypothermia to occur, especially in vulnerable individuals. Older adults can develop low body temperatures after exposure to mild cold which would only produce discomfort in younger people.

Proper treatment depends on the severity of the hypothermia. With mild cases (body temperature of 98–90° (F), move to a warm area, replace any wet clothes, cover your head and drink warm (not hot), non-alcoholic liquids. For more severe cases, call 911 for an ambulance and cover all extremities completely.

Frostbite

Frostbite occurs when skin temperature drops and blood flow to the surface of the skin decreases as the blood vessels constrict. The fluid in the cells and tissues begins to form ice crystals.

Frostbite typically affects the extremities, particularly the feet and hands. Symptoms include cold, stinging or achy feelings in the frostbitten area, followed by numbness. The skin turns red, then purple, then white or very pale and is cold to the touch.

If these symptoms occur, call 911. Do not rub the affected area and wrap it in soft cloth.

Trench foot (immersion foot)

Trench foot develops when the feet are cold, damp and confined in constricted footwear. It is similar to frostbite and can also result in gangrene and amputation.

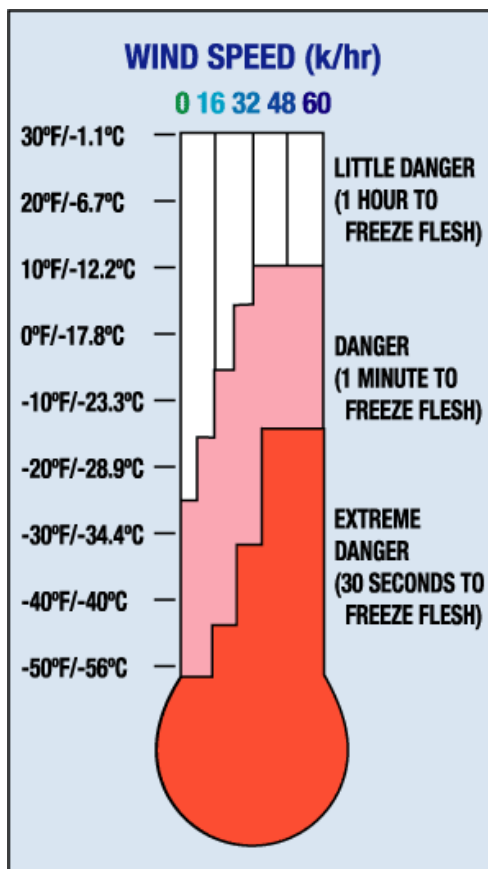
Trench foot can result in swelling, tingling, itching, loss of skin or skin ulcers. If these conditions develop, soak feet in warm water, then wrap with dry cloth bandages and consume warm, non-alcoholic drinks.

Preventing cold stress

Planning for work in cold weather is the most important defense. Be aware of how the body reacts to cold and wear appropriate clothing. Proper insulation and good ventilation is critical.

Employers can help protect workers from cold stress by providing training, controlling temperature and wind with heaters and windbreaks if possible, rotating workers in cold jobs, scheduling work at the warmest times, providing extra breaks as necessary, establishing a buddy system and keeping first aid supplies and equipment available.

U.S. Customary Wind Chill Chart												
Estimated Wind Speed in MPH	Actual Thermometer Reading (F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Temperature (F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect)	LITTLE DANGER* (for properly clothed person)			INCREASED DANGER* (for properly clothed person)				GREAT DANGER*				
*DANGER FROM FREEZING OF EXPOSED FLESH												



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